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There's no madness in my method: Explaining how your research findings are built on firm foundations

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Introduction

When writing about research, explaining the method can appear as an afterthought or even madness: wasting precious words that could be better used in discussing the findings. Yet, explaining your method clearly is *not* madness. Rather, a section that explicitly explains the method and the reasons why the research was conducted in the way it was is a crucial component of any research report or academic paper, in coaching or other disciplines. In fact, we would argue that a well-articulated method section is particularly important in coaching research, as the setting up of studies can be complex, highlighting a necessity for researchers to be very clear about data collection techniques and analysis procedures used, as well as in regards to any ethical and professional considerations. In our title we offer the analogy of your research as a building with firm foundations. In order for a building to be safe, it needs to be built on firm foundations. Similarly, you need to show that your research is well founded. A clear concise explanation of your research method provides the foundation that allows your readers to know that your research findings can be trusted. It is this that provides the focus for our article.

We begin our article by outlining the difference between method and methodology. Our focus being on the former, we then highlight the importance of explaining the research method. This is followed by a discussion relating to the validity and reliability of methods. Our article concludes with a summary and checklist of what to consider when explaining the research method in coaching research.

Method or methodology?

Whilst you are undertaking your research you will, almost certainly, read books and articles in which the terms 'research method' and 'research methodology' are used interchangeably, perhaps just using methodology as a more verbose way of saying method. We believe that it helps to be more precise in your use of these terms.

The term 'method' is usually used to refer to techniques and procedures by which data are obtained and analysed and the justification for using them. It therefore includes information about how the sample was selected; the technique or techniques you used to collect your data (for example, questionnaires, observation and interviews) as well as procedures (non-statistical and statistical) you used to analyse your data (Saunders, Lewis & Thornhill, 2012). In a recent study by Milner, Ostmeier and Franke (2013) for example, which examined how 'Western' coaching approaches could be applied in other national cultures, the researchers used critical incidents interviews to collect data on experiences of German coaches during cross-cultural coaching and to determine what cultural aspects might impact on the effectiveness of such coaching.

In contrast, the term ‘methodology’ usually refers to the theory of how research should be undertaken. Methodology is therefore not the justification for your choice of particular data collection methods; rather, it encompasses the philosophical assumptions and underpinnings upon which your research is based and the implications of these for the method or methods you have used (Saunders et al., 2012). A recent study by Carr and Seto (2013) for example employed an action research strategy as an emergent and iterative process of inquiry to investigate how coaches’ own cultural understandings influence the coaching they provide. The choice of this particular research strategy was based on the underpinning notion that it would assist coaches in exploring what role their own cultural preferences play in coaching and to consequently facilitate learning for future coaching projects.

You therefore need to be clear whether you are reporting just your method or both your method and methodology. This may be dictated by the requirements of any journal to which you are intending to submit your article. However, many journals, including *Coaching: An International Journal of Theory and Practice*, allow authors of empirical papers to decide themselves whether to include a section headed either ‘method’ or ‘methodology’ in their article. Like many, this journal seeks to conform to American Psychological Association (APA) guidelines in all publications, which stipulate that distinct sections need to be clearly identified (APA, 2009; APA, 2001). With regard to method, the subject of this article, you need to provide sufficient detail about the data collection techniques and analysis procedures you use in your research to enable your readers to understand precisely what you did and why you did it the way you did.

The importance of explaining the method

In our introduction we alluded to the method section providing, through an explanation, evidence that your research has a solid foundation. We have all watched television documentaries and read newspaper articles where research findings are critiqued as being ‘unsound’, ‘unsafe’, ‘dubious’ or ‘questionable’. These critiques are often based on a problem with the data collection or analysis and, as a consequence, whether the findings are biased in some way or can be trusted. Such criticisms invariably relate to the validity and reliability of the method; for instance Briner (2012) argued that more good quality research is needed on both coaching outcomes and practice. Fortunately, providing your research has been undertaken rigorously, a clear explanation of the method can help establish the validity and reliability of your findings.

Establishing validity

A method is valid when the procedure or procedures used to collect the data accurately measure what they are intended to measure and, subsequently, the analysis is appropriate for the data collected, and the findings reported are really about what they profess to be about.

Validity of quantitative methods

Suppose you decide to answer your research question and meet your objectives (Rojon & Saunders, 2012) by collecting quantitative data. For example, you might be interested in the relationship between an organisation's employees' attitudes to being coached and their commitment to that organisation and may choose to use a questionnaire to collect relevant data. To show that this aspect of your method is valid, you will need to explain how you ensured the sample from whom your data were collected were statistically representative of employees in that organisation. This will usually involve using a probability sampling technique (Saunders et al., 2012). You will also need to explain why you are sure that the questions you have asked about employees' attitudes and about their commitment are actually measuring their attitudes and their commitment. You therefore need to both outline the questions you asked in your questionnaire and explain why you consider them to be valid.

From your critical review of the literature (Saunders & Rojon, 2011) about organisational commitment, you will already be aware of the large amount of research previously undertaken in this area, which has used questionnaires to collect data. You will also know that many researchers have used the same set of questions (usually referred to as a 'scale') in their questionnaires to collect data on organisational commitment, for example Meyer and Allen's (1997) 18 questions. This means when writing about your method you can comment on the validity of these questions for your own sample, explaining how your own research relates to one or more previous studies that have used these questions. As the questions have already been published as a scale, you do not need to repeat the questions you used in your article, just reference their source in one or two sentences.

Going back to our example study measuring employees' attitudes to coaching, we may assume that, for purposes of this article, the decision was taken to devise the questions specifically for this research. As these are new purpose made questions, which have not been used previously, you need to convince your reader that they are valid questions. You therefore need to explain briefly how they were developed and why you consider them to be a valid measure of attitudes to coaching. In doing this you might refer back to a focus group or in-depth interviews with employees that you used to help you understand what aspects were likely to be important with regard to employees' attitudes to coaching. To justify why your questions are valid, you might also (or alternatively) refer to literature, which has stated the aspects covered by your questions are important. You may also need to either provide an example of these questions or, dependent on where you are hoping to publish your article, be expected to include them in a table (as part of the results) or as an appendix.

In your writing, you will also need to show that your analysis was valid. For questionnaires, some form of statistical analysis is usually undertaken of the quantitative data collected. For such analyses there are clear rules regarding which statistics and graphs can be used to analyse different types of quantitative data, which you must follow. Within this article, it is impossible for us to go into

these in detail. Fortunately, there are many good statistics textbooks of varying complexity that can help you here. Of these our own favourites include Berman Brown and Saunders (2008), which discusses basic statistics very simply, Field (2013), which provides an easily accessible overview of a wide range of statistics and Hair Jr, Black, Babin and Anderson (2013), which covers more advanced statistics. Remember, your readers will be assessing the validity of your statistical analysis on the basis of your statistics being appropriate for the type of quantitative data and the question you are trying to answer (Saunders et al., 2012), and whether or not your interpretation of each statistic is correct.

Validity of qualitative methods

Alternatively, you may have decided to answer your research question and meet your aim and objectives by collecting qualitative data through, for example, in-depth interviews or observation. We might imagine that you have undertaken in-depth interviews, each lasting one hour, with fifteen coaches about which aspects of their practice they consider most beneficial to their clients. In this situation you are unlikely to be using a probability sampling to select a sample that is statistically representative of all coaches. However, this does not matter, as you will not be trying to make statistical generalisations from the data you collect. Rather you will be looking for patterns in your data in order to generalise about what aspects of coaching practice are likely to be beneficial. What is important for the validity of your research is your justification for selecting the non-probability sample the way you did and, in particular how it allows you to answer your research question or meet your aim and objectives (Saunders, 2012). As you will not be making statistical generalisations, a statistical justification is immaterial.

In the case of your fifteen in-depth interviews, you will have prepared carefully for your interview and developed a checklist of topics to be covered to ensure that you find out those aspects of their practice coaches consider most beneficial to their clients. In your method you will need to outline the topics you covered in your interview explaining why they were needed in relation to your research question and objectives. When doing this you will probably refer to your critical review of the literature about coaching practice. You will have also thought about a suitable place or places to conduct these interviews in order that each participant feels relaxed and so will be more likely to answer your questions openly and honestly. You need to explain clearly and concisely in your method that you did this, and provide the reasons for the decisions you made. As in our previous example, your explanation will need to refer explicitly to research methods textbooks and literature to help justify your choices. This will help your reader assess the validity of your interview data in relation to answering the research question or meeting the objectives.

Establishing reliability

A method is reliable when the data collection technique or techniques used yield consistent data and the analysis procedures, if repeated, would give the same results. Your method section needs therefore to provide sufficient detail to allow

the data collection and analysis to be repeated. In much coaching research, even if sufficient details are provided, it is likely that the research context will have altered since the research was carried out. Alternatively the original research context may be different to the context in which it is being replicated, and so the results might not be the same due to different circumstances. Consequently, it is also important to provide a brief overview of the research context as part of your method as this will also have affected your findings.

Reliability of quantitative methods

Coming back to our earlier example in which a questionnaire was used to collect quantitative data about the relationship between an organisation's employees' attitudes to being coached and their organisational commitment: Here, reliability refers to the extent to which your probability sample represents all employees in the organisation and the extent to which your questionnaire yielded consistent data from all those employees who responded. With regard to your sample, given the total number of employees in the organisation, statistically you can calculate the required sample size for us to be 95% certain that your sample will represent the population within specified confidence limits (Saunders et al., 2012). Consequently, it is important to state your sample size and response rate in your method. This can then be compared with response rates achieved by other researchers to provide an indication of whether your response rate is lower or higher than usual (Baruch & Holtom, 2008). You can also assess the representativeness of your sample of employees by comparing their demographic characteristics (for example: age, gender, occupation) with that of the entire population (all employees). As part of this it is also helpful, if possible, to assess the characteristics of those who refused to take part (non-respondents).

Reconsidering now the questions in your questionnaire, but with regard to assessing their reliability, it can be noted that Meyer and Allen's (1997) set of questions have been designed to measure three distinct aspects of organisational commitment: continuance, normative and affective commitment. As with any other pre-determined scales (sets of questions) you use in your research, you need to establish the extent to which the questions measure each of these components reliably and report this in your method section. Fortunately, you can test the reliability (internal consistency) of a scale that measures such a distinct aspect using the Cronbach's alpha statistic (α), whether you are using an existing scale or questions that were purpose made for your research. If you are using an existing scale it is good practice to report both your Cronbach's alpha statistic and that achieved by others who have previously used this scale. For all questions, including individual questions you have designed yourself, you need to provide an assessment of why you consider they are reliable. This is often related, at least in part, to your pilot testing of the questionnaire and, in particular, the evidence you have that your respondents all understood the questions the same way.

With regard to statistical analysis of quantitative data, reliability can be indicated by explaining how data were coded in detail. More specifically, this means giving

justified answers to questions such as ‘how were codes derived?’ or ‘who did the coding?’ and, if more than one person was involved in the coding process, it is important to provide information on inter-rater reliability such as Cohen’s kappa (κ).

Reliability of qualitative methods

For techniques that collect qualitative data, for example in-depth interviews or observation, establishing reliability of your method is still important in regards to sample selection, data collection and data analysis. Consider again your in-depth interviews with the fifteen coaches, starting with the sample size. Within qualitative research the general advice is that data should continue to be collected until data saturation is reached, in other words until collecting additional data no longer reveals anything new in relation to your research question and objectives. Consequently you need to state clearly in your method how many interviews were undertaken before data saturation was reached (Saunders, 2012).

Reliability of your data collection will be assessed using your explanation of what you did. Whilst we have already outlined some of the aspects you would need to include in your method earlier, there are other aspects that are also important with regard to reliability. In particular you need to outline the instructions you gave to your participants and explain briefly how you conducted the interview, including whether you audio recorded the interview or took notes and whether or not the former were transcribed. You also need to be clear regarding any concerns you have regarding bias in the participants’ responses.

To enable the reliability of your analysis to be assessed, you need to explain transparently how you made sense of your raw data. This necessitates explaining the analysis process you adopted. If you decided to analyse your fifteen interviews with coaches by categorising units of data, you would need to state whether your categories were derived from the literature or the data itself (in-vivo codes) and provide an explanation with examples of how this was done. You might decide to show this using a table (for an example, see McDowall & Saunders, 2010). You would also subsequently illuminate your findings with appropriate quotations taken from your interviews explaining briefly why you considered them appropriate. For example, they might provide a good representation of the majority opinion in your sample, or illustrate an extreme case.

In summary... what to include in your explanation of method

From your reading of our article so far, you will now understand why there is a necessity to provide a good method section to enable readers to assess the validity and reliability of your research. Readers need a clear and concise justified explanation of your method in sufficient detail to enable your research to be replicated. At the same time you will know that, because another research context is likely to be different, a perfect replication is unlikely to be possible however good your explanation. You will also be aware from our two examples

that precisely what needs to be included will differ depending on whether you are using quantitative or qualitative methods. It will be influenced by your data collection techniques, the actual data gathered and analysis procedures you have used. In this section we draw together these ideas as a short checklist of what you need to include in your explanation of method. Whilst we have presented these in chronological order of the research process, it may be more appropriate for your research method section to deal with them in a different order. We must also emphasise that not all questions will be relevant for all research projects.

Research setting

In order for your readers to understand fully your research, we believe you need to outline the context within which the data were collected. You therefore need to ensure your method section answers the following questions:

1. What is the research setting?
2. Why did you choose this research setting?
3. When was the research carried out?

Sample selection and research participants/respondents

The technique or techniques you used to select your sample need to be explained clearly and justified paying attention to how they were selected, who took part, how many took part and those who refused to take part:

4. How were those who took part selected and why?
5. How many took part and why?
6. What were the characteristics of those who took part and how do they relate to the research question?
7. What were the characteristics of those who refused to take part?

Data collection materials and their operationalisation

The materials you use to collect your data need to be described and their use justified. In addition you also need to explain precisely how they were operationalized in terms of your use of questionnaires, interviews, observation or some other technique and the reasons why you did it the way you did:

8. What existing questions/scales/schedules/check lists and so forth were used (if any) and why?
9. How were purpose made questions/scales/schedules/check lists and so forth (if any) developed and why?
10. How were these used to collect data:
 - a. What instructions were given to participants/respondents from who data were collected?
 - b. How many questionnaires/interviews/observations and so forth were undertaken and why?
 - c. How long did each questionnaire/interview/observation and so forth take to complete?

Data analysis procedures

The procedures you use to analyse data need to be explained clearly with examples if necessary. For statistical analysis this will also necessitate ensuring that the statistics are appropriate and the data satisfies the assumptions of the particular tests used:

11. How were the resulting data analysed?
12. Did you ensure that procedures (including statistical techniques) were used correctly and, where appropriate assumptions satisfied?

Note you do not need to say explicitly that the statistics are appropriate and satisfy the assumptions in your article, just ensure that this is the case when you subject your data to statistical analysis.

Reliability and validity of the method and ethical concerns

When writing your method you should include a brief assessment of its reliability and validity. Within this you normally consider reliability first before addressing validity. You should, if necessary, outline any particular problems or biases in the method and any likely impact of these on your findings. It is far better that you highlight them and explain why, despite these problems, your research is still useful than the alternative of omitting such details. If a reviewer or reader discovers that your work is not reliable or valid she or he will probably consider you are hiding something and so reject your findings. You should also discuss any ethical concerns that may have arisen and explain how these were addressed. Finally we recommend that you re-read your method section to make sure it is clear that the data you have collected do enable your research question can be answered and your objectives met. Hence our final set of questions:

13. Have you provided a brief assessment of the reliability and validity of your method? For example, your study may be investigating the impact of a new coaching intervention on individuals' well-being and satisfaction at work using a combination of quantitative and qualitative methods, namely a set of scales related to the two constructs under examination, as well as focus groups with the participants. In this case, it would be important to provide information regarding the reliability (e.g., internal consistency) and validity (e.g., construct validity) of the scales used, as well as clearly outlining and justifying how the sample of coachees was selected and how data were analysed.
14. Have you established for your readers that you undertook the coaching research ethically and explained how potential ethical concerns (if any) were addressed?
15. Have you shown clearly how your method collects data that enables your research question to be answered and aim and objectives to be met? This needs to be evident throughout your submission.

Conclusion

Within this article we have offered both a justification for explaining your research method and a consideration of those aspects that ought to be included to enable others to make a reasoned assessment of your coaching research. A rigorous method provides the firm foundation for all empirical research. Like all research users, those who make use of coaching research need to be provided with a clear explanation of the method to be able to assess its rigour. Without such explanations they will be unable to assess the validity and reliability of coaching research and, even if it was undertaken rigorously, may dismiss the findings as possibly untrustworthy and so of little utility.

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